INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1934 No. 6

DISCOVERIES AND CURRENT EVENTS *

French North Africa: The Desert Locust (*Schistocerca gregaria*) (1).

ALGERIA.

On 1 March 1934 a large dark red swarm coming from the W. settled at 2 p. m. at Chaabet Elhariga and Chaabet Sidi Cheikh in the Metlili oasis (Ghardaïa). It flew away towards the N. on 3 March at 10 a. m.

On the 4th a red and yellow swarm coming from the W. settled at midday at Meteleg Aïcha (25 kms S. S. W. of Ghardaïa). Departed on 7 March at 10 a. m. flying S.

A small swarm coming from the S. W. settled at 1 km to the S. of Blidet Amor (Touggourt). Flew away east on the 5th.

From 4 to 8 March the following observations were made:—

Red and yellow swarm settled at Seguiet Etterik (55 km S. W. of Ghardaïa) over 500 m. Copulation.

Laying at Dir Elhetaïba (60 km S. W. of Ghardaïa) over 500 m.

Swarm settled at Dumat Elhallaba (80 km. S. W. of Ghardaïa) over 1 km. Copulation and the beginning of laying.

Small egg deposits at the Oued Djedari (75 km S. W. of Ghardaïa) and at Dekhelet Terifia (80 km S. W. of Ghardaïa).

Swarm settled at Tshaïa Elanz (85 km S. W. of Ghardaïa) over 700 m. Copulation.

Small egg deposits at Dekhel Smaïl (75 km S. W. of Ghardaïa).

Swarm settled in the Oued Nedechi (75 km S. W. of Ghardaïa) over 300 m. Copulation.

Swarm settled in the Oued Dzamrane (80 km S. W. of Ghardaïa) over 1 km. Copulation.

Large egg deposits at Bab Hassi Sidi Hamza (95 km S. W. of Ghardaïa).

On the 6th a small dark red swarm coming from the W. settled in the evening at Daïet Tarfa (75 km to the S. W. of Ghardaïa). Departed on the 8th, flying N.

On the 12th a swarm settled to the W. of Moghrar Foukani (Aïn-Sefra) and flew away E.

Another swarm settled at Hadjerat Kehila (Aïn-Sefra).

* Under this and the next heading the countries are arranged in French alphabetical order.

(1) Communication from the Government General of Algeria (Direction des Services Economiques) to the International Institute of Agriculture.

On the 15th comparatively large red and yellow swarms coming from the W. settled in the district of Moghrat Foukani and Moghrar Tahtani el Ghouil (Aïn-Sefra). Copulation and laying.

On the 19th a red swarm coming from the W. passed Foukania Ogglat (Aïn-Sefra) flying E.

A yellow swarm coming from the E. passed at midday over the Ghardaïa-El Goléa track at 150 km from Ghardaïa flying N. N. W.

On the 20th a small yellow swarm coming from the S. passed at Ouadi Seddeur (100 km N. E. of Ghardaïa) flying N.

On the 21st a small yellow swarm coming from the E. passed at 11 a. m. over the Ghardaïa-El Goléa track at 40 km from Ghardaïa, flying N. N. W.

A rather large red and yellow swarm coming from the S. E. passed at 3 p. m. over the Ghardaïa-Ouargla track at 60 km from Ghardaïa, flying W.

A medium-sized yellow swarm coming from the S. passed at a great height over Beni Isguen, Ghardaïa and Melika, flying N. E.

A medium-sized red and yellow swarm coming from the W. passed at Metlili (30 km S. of Ghardaïa), flying E.

A swarm settled between Hassi ben Messaoud and Hassi Djafar (130 km N. of El-Goléa) laid.

On the 23rd a small swarm coming from the S. settled at Zaouch, 20 km S. W. of Moghrar Tahtani (Aïn-Sefra) and laid over 1 hectare.

Laying reported at 8 km S. E. and 6 km E. of Koubaa Si Brahim el Guerrich (Aïn-Sefra).

Laying reported over 1 hectare on the S. E. side of the Djebel Haimer (Aïn-Sefra).

Swarm settled in the Oued Hahel el Ktab, a tributary on the right bank of the Oued Smar (Aïn-Sefra).

On the 28th three large red and yellow swarms coming from the S. settled at Moghrar Foukani and Moghrar Tahtani (Aïn-Sefra) and laid.

A swarm settled 25 km to the W. of the Ksar de Sfissida (Aïn-Sefra) and laid.

A large red and yellow swarm coming from the W. settled at 10 a. m. at Goufafa (50 km to the S. W. of Ghardaïa) and laid over 800 × 500 m. Took flight again on the 30th at 4 p. m. towards the N. E.

On the 29th a small swarm coming from the S. settled at Chegga des Fetait (50 km to the S. W. of Touggourt) and flew N.

On the 31st a medium-sized swarm settled at Tarart Mézine, 40 km to the S. of Ksar de Boussemghoun (Géryville). Copulation and slight laying over 15 hectares.

MOROCCO.

From 2 to 4 March laying was reported over 750 hectares near Mogador.

On the 5th and 6th laying was reported over 1.645 hectares at Bir Kouach (15 km to the E. N. E. of Mogador).

On the 24th laying was reported over 60 hectares at Korimat (45 km to the E. of Mogador).

Angola: Locust Movements (*Nomadacris septemfasciata*) (1).

Luanda District. — On 7 January 1934 a large swarm of locusts passed over the Grãtidao holding, civil circumscription of Dande, proceeding in the direction of Barra do Dande. Other swarms were observed within the area of this circumscription, causing considerable damage in certain parts.

On the 11th various swarms, preparing to lay, settled in the proximity of the civil post of Barra do Dande.

On the 12th several swarms passed over the civil post of Bom Jesus, civil circumscription of Icolo and Bengo, attacking the sugar plantations. Throughout the region of Catete small swarms were observed, very scattered and flying in no determined direction. It is believed that within a few days they will lay in that part.

Benguela District. — On 15 January the capital town of the Quilengues civil circumscription was invaded by enormous swarms. The civil posts of Impulo and Tchongoroi, belonging to the same circumscription, were also invaded by large swarms, to the alarm of the inhabitants.

On the 16th a great swarm devastated the maize fields of the civil post of Balombo, civil circumscription of Bailundo.

On the 17th an immense swarm coming from the west passed over the capital of the Ganda circumscription, proceeding in a northerly direction.

At 10 a. m. a swarm, extending approximately 10 km., red in colour and coming from Caala, flew over the region of Canjanje.

On the 18th a large swarm, red in colour, proceeding from S. E. passed over the village of Lepi, civil circumscription of the same name going towards the south.

On the 19th large swarms continued to destroy the maize fields of the civil post of Balombo, civil circumscription of Bailundo.

On the 26th, from 2 to 6 a. m., successive swarms passed over the village of Boccio, civil circumscription of Lobito.

On the 29th a swarm 5 km. in breadth passed over the village of Quipeio, civil circumscription of Huambo.

On the 31st locusts appeared again in the civil post of Mungo, civil circumscription of Bailundo, the presence of hoppers having been already noted in the village of Luimbale.

Almost the entire area of the village of Egyto has been invaded by the pest, serious damage being caused to the native crops and palm-groves belonging to Europeans.

Moxico District. — At 3 a. m. on 9 January a swarm of a whitish colour, 2 km. in width, passed over the civil post of Sessa, circumscription of Luchazes. It came from the north and proceeded towards the south.

(1) Communication from Mr. Jorge de Barros Rodrigues Queiroz, Agronomical Engineer, Director of the Laboratory of Plant Pathology and Agricultural Entomology of the Board of Agricultural and Commercial Services, Luanda, transmitted to the Institute by the Government General of the Colony.

South Quanza District. — On 20 January a red swarm, covering an area of 20 km², passed over the civil circumscription of Gabela, proceeding towards the post of Quilemba.

North Quanza District. — Large larval bands appeared within the areas of the posts of Lucala and Pungo Andongo, civil circumscription of Cazemgo.

* * *

In spite of the instructions and circulars which the Board of the Agricultural and Commercial Services have forwarded for some time past to the different districts, with the object of obtaining regular and precise information regarding all locust movements in the Colony, their centres of origin and other aspects of the pest, the majority of circumscriptions continue to give no information of what takes place within their respective areas. Hence it is impossible to publish monthly notes containing all the information which could be collected on this subject.

Locust Control.

Luanda District. — In the circumscription of Icolo and Bengo a squad of 100 natives has undertaken the destruction of the hoppers within the area of Bom Jesus.

In the remaining country many winged insects have been destroyed by the natives, who set fire to the spots where the locusts had spent the night.

Benguela District. — Measures have been taken for the destruction by flame-throwers of the swarms which appeared in the post of Mungo and in the circumscription of Bailundo, as well as the hoppers which appeared in the circumscription of Lubir.

For this purpose 2.000 litres of an inflammable mixture were provided together with a barrel of sodium arsenite.

North Quanza District. — In the circumscription of Cazengo the local authorities are much occupied with the campaign for the destruction of hoppers. It presents great difficulties on account of the area to be covered, the number of insects and the want of material with which to carry on the work.

South Quanza District. — In some parts of the circumscriptions of Seles and Gabela various squads of natives have destroyed some larval bands by the ditches method.

By this system many egg deposits have been isolated and hatching is awaited in order to begin the campaign.

In the circumscription of Calulo the whole area is kept under careful supervision in accordance with the plan laid down for the campaign, some larval bands having been already destroyed.

Huila District. — In the towns of Quipungo, Capelongo and Mulombo, circumscription of Chiaba, the collection of eggs and destruction of hop-

pers have been attempted, eggs to the weight of a ton having been already secured.

In the post of Humbe, circumscription of Gambos, 385 kg. of eggs were bought from the natives. In the same circumscription there is a special body of police responsible for the notification of breeding areas, according to the established plan, and in the circumscription of Lubango a number of swarms have been destroyed with satisfactory results.

Malange District. — In the civil circumscription of Duque de Bragança some thousands of natives divided into squads and, by means of the ditches method, completely destroyed all the larval bands found there.

In the circumscriptions of Quela, Malange and others, large masses of eggs were destroyed by surface ploughing. Many hoppers were also destroyed by ditches and the use of flame-throwers.

This district is undoubtedly among those which have been most energetic in the locust control campaign.

Luanda District. — In the civil circumscription of South Cassai many locusts were destroyed by available local means in the absence of proper control material.

From the remaining circumscriptions of the Colony no information has been received in connection with the anti-locust campaign.

Distribution of Funds.

The credit of 300,000 *ags.* granted by Decree No. 565 of February last, made possible a further distribution of funds to the following districts. —

Benguela	50.000 *ags.*
Lunda	10.000
South Quanza	25.000
North Quanza	20.000
Zaire-Congo	10.000
Huila	25.000
Luanda	10.000
Civil circumscription of Ambriz	15.000

Material for Control.

A consignment of 30 continuous pressure sprayers has been ordered, together with the various constituents of a smoke-producing mixture for the purpose of protecting the crops.

Further supplies of material will shortly be ordered, including flame-throwers and sodium arsenite.

Experiments will be made for the purpose of ascertaining whether it is possible to make use of various products resulting from the distillation of 'Mubafo' resin (*Canarium mubafo*), for the destruction of the hoppers.

Eritrea: Locusts (1).

During April 1934 the presence of locusts has not been reported in the Colony.

Spain: *Aspidiotus perniciosus* (2).

The presence of the San José scale (*Aspidiotus perniciosus*) has not been reported in Spain.

Mozambique: Diseases and Pests of Citrus in the District of Lourenço Marques (3).

In the course of the phytosanitary inspection of citrus plantations in the district of Lourenço Marques citrus canker (*Phytomonas citri*) has not been observed.

The introduction of this disease would seem impossible on account of the control measures adopted and the inspection and strict quarantine to which imported citrus plants are subjected.

At the same time inspection of the plantations is continued to ensure the necessary treatments against the following other diseases and pests of citrus: —

Chlorosis
Capnodium citri
Colletotrichum gloeosporioides
Pythiacystis citrophthora
Rosellinia sp.
Sporotrichum citri
Aphis tavaresi
Asterolecanium sp.
Ceroplastes sp.
Chrysomphalus aurantii
C. ficus
Icerya purchasi
Lecanium (Coccus) hesperidum
Lepidosaphes pinnaeformis
L. gloveri
Pseudococcus citri
Saissetia hemisphaerica (S. coffeae)
Ceratitis capitata
Pterandrus (C.) rosa
Dacus brevistylus
D. vertebratus
Tridacus pectoralis
Anoplocnemis curvipes
Dysdercus nigrofasciatus
Leptoglossus membranaceus
Papilio demoleus
Argyroploce leucotreta

The following natural enemies of the aphides and scale insects mentioned in the above list have been observed : —

Sphaerostilbe aurantiicola
Chilocorus angolensis
C. wahlbergi
Chilomenes quadrilineata
Exochomus nigromaculatus
Novius obscurus
Platynaspis capicola

(1) Communication from Dr. Luigi Massa, Acting Chief of the Agricultural Bureau of Eritrea, transmitted by the Government of the Colony.

(2) Communication from the Director General of Agriculture at Madrid to the International Institute of Agriculture. (Received 14 May 1934).

(3) Communication from Mr. Julio Gardé Alfaro Cardoso, Chief of the Section of Entomology at Lourenço Marques, transmitted to the Institute by the Administration of the Agricultural Services of the Colony of Mozambique.

Southern Rhodesia: Locust Invasion, 1932-1934 (1).

Monthly Report No. 15. February, 1934.

Red Locust (*Nomadacris septemfasciata*).

The egg-laying by belated flying swarms mentioned in my January Report (No. 14) continued at least during the first half of February. By the end of February, reports of flying swarms were no longer being received. Occasional solitary fliers have been seen in many parts of the country, being individuals left behind by flying swarms from November onwards. The egg-laying period this season has extended over fully three months, but the later layings have been comparatively insignificant.

The earlier hoppers were mostly in the 5th and 6th stages at the end of the month, while comparatively small numbers from later egg deposits were still hatching. Advanced moulting to the adult form commenced in some areas in the Zambesi Valley at the end of the month.

Thus there were present in the colony during February, old adults, eggs, hoppers in all stages, and newly moulted adults of the new generation.

Damage to Crops.

In some districts the District Controllers of Locust Operations are already satisfied that crops have been saved from the hopper stage. In others native crops have suffered rather severely. Europeans, in general, have been successful in protecting their crops from hoppers, but some considerable damage has been sustained in individual cases.

Damage by the apparently belated flying swarms has occurred to both European and native crops but has been more or less confined to a few localities in the south east.

In view of the fact that the locusts will commence to fly about one month earlier this season than last anxiety is felt concerning possible serious damage to maize by flying swarms as these crops will not in general have matured beyond risk of damage by the middle of March when the earler flying swarms are expected to commence moving about.

Enemies.

Few reports of enemies were received during the month, but it is likely that most of the later egg deposits were being attacked by *Stomatorrhina* and possibly mites. There were no confirmed reports of enemies, parasites or disease in the hoppers, and the only enemies of fliers noted were red mites.

(1) Communication from the official correspondent of the Institute, Mr. Rupert W. Jack, Chief Entomologist, Department of Agriculture, Salisbury, Southern Rhodesia.

Tropical Migratory Locust (*Locusta migratoria migratorioides*).

Hoppers of this species, unnoticed among swarms of Red Locust hoppers, commenced moulting to the adult stage at the beginning of the month. The new fliers remained, in general, with the hoppers amongst which they had developed, and which were mostly in the 4th and 5th stages. In a few cases, small « swarms » of one or two hundred fliers were seen separated from hoppers, but hopper swarms were invariably found nearby.

Sodium arsenite spray at the usual strength, i. e. 3 ½ oz. (av.) to 4 gallons water, is reported to kill these adults.

Campaign.

The campaign against hoppers has continued vigorously. A slight reduction in the intensity of operations was possible by the end of the month in some districts, and in one the campaign has been brought to a successful conclusion.

Owing to inability to obtain further supplies of dry arsenite of soda from the Union of South Africa cattle dip was being issued at the end of the month. This is reported as equally effective, in conformity with experience during past campaigns. One hundred and seventy (170) tons of arsenite of soda have been issued to date in the campaign apart from cattle dip, and at the end of the month seven thousand (7,000) bucket pumps are more or less in action together with ten (10) handpower barrel sprayers mounted on lorries and five mounted on their own wheels. These large pumps are reported as highly efficient and useful, in fact one D. C. L. O. estimates that one of these pumps on a lorry is equivalent to about one hundred (100) natives serving small pumps.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Algeria. — By Decree of 6 April 1934 carrying modifications of the Decree of 14 April 1932 on the importation into Algeria of fresh fruits coming from countries in which the San José scale (*Aspidiotus perniciosus*) occurs, the entry into and transit through Algeria of citrus fruits in bulk, of Spanish origin, are authorised. (*Journal Officiel de l'Algérie*, Alger, 20 avril 1934, 8e année, nº 16, p. 343).

England and Wales. — With the object of preventing the introduction of the cherry fruit fly [*Rhagoletis cerasi*], the Importation of Raw Cherries Order of 1934, dated May 7, 1934, regulates the importation of cherries into England and Wales from Spain, France, Italy, Germany and any other European country during the 1934 season. (*Statutory Rules and Orders, 1934, No. 446. Destructive Insect and Pest, England. The Importation of Raw Cherries Order of 1934, Dated May 7, 1934.* London, 1934, 4 pp.).

Spain. — By Decree of 22 March 1934 the establishment is approved of the Institute for Development of Cotton Growing (' Instituto de Fomento del Cultivo Algodonero ').

For the working of this Institute the services are organised in five sections. The Technical Section, directed by an agricultural expert residing in Sevilla, will undertake, among others, the following functions : —

(a) the direction of the work of disinfection of the cotton seeds in the ginning factories, and of all imported seeds;

(b) recognition and classification of the pests, diseases and affections appearing on the cotton plantations, together with the indication of the means for preventing or eradicating these, in agreement with the provincial Services of Phytopathology. (*Gaceta de Madrid*, Madrid, 23 marzo 1934, año CCLXXIII, tomo I, núm. 82, págs. 2224 a 2228).

*** By ' Orden ' of 17 April 1934, the insecticide mixture known as ' Clensel ' has been declared useful for agriculture, following on good results having been obtained in the campaign against the fruit fly (*Ceratitis capitata*). (*Gaceta de Madrid*, Madrid, 25 abril 1934, año CCLXXIII, tomo II, núm. 115, pág. 579).

France. — An Inter-Ministerial Decree of 13 April 1934 establishes the conditions in which the control of the sanitary inspection of potato crops intended for seed will be carried out. (*Journal Officiel de la République Française*, Paris, 15 avril 1934, LXVI[e] année, n° 89, p. 3851).

*** A technical regulation approved on the same date by the Minister of Agriculture fixes the details for the application of the said Decree (requests for admission to official control, registration of crops admitted to control, organisation of control. technique of control, costs of control, technical instructions for control). (*Ibid.*, p. 3851-3852).

*** A Ministerial Decree of the same date nominates the members of the Technical Commission responsible for carrying into effect in the field the official control in question. (*Ibid.*, p. 3853).

*** A Notice to exporters published by the Ministry of Agriculture recounts the phytosanitary regulations for importation into England, Wales, Scotland and Northern Ireland of living plants and parts of living plants intended for purposes of propagation, also potatoes (tubers, plants and haulms), raw vegetables (including onions, tomatoes, aubergines and lettuces) and cider apples, coming from the mainland of France. (*Journal Officiel de la République Française*, Paris, 17 avril 1934, LXVI[e] année, n° 90, p. 3892).

Italy. — By Ministerial Decree of 15 March 1934 a competition (by examinations and qualifications) has been opened for eight studentships for furthre study of Plant Pathology or Agricultural Entomology at the Royal Institutes for Research and Experiment in Phytopathology or at the Royal Observatories for Plant Diseases. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 26 aprile 1934, anno 75°, n. 97, p. 2132).

*** By Royal Decree Law No. 646 of 22 March 1934 the Treaty of Commerce and Navigation between the Kingdom of Italy and the Republic of Salvador, signed at San Salvador on 19 March 1934, has been approved.

According to article 14 of this Treaty the high contracting parties agree not in any way to impede the reciprocal trade of the two countries by prohibitions or restrictions on importation, exportation or transit. Exceptions to this ruling may however be allowed in so far as they apply to all countries or to all countries in similar conditions, with a view, *inter alia*, to the protection of plants against diseases, insects and dangerous parasites. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 27 aprile 1934, anno 75°, n. 98, pp. 2137-2142).

*** The Royal Decree Law No. 588 of 16 April 1934 gives full and entire effect to the Commercial Agreements between Italy and Turkey, signed at Ankara on 4 April 1934.

In accordance with article 5 of the Commercial Convention each of the high contracting parties retains *inter alia* the right to prohibit or restrict importation, exportation and transit of merchandise for reasons including those of sanitary and veterinary policy or of protecting animals and plants against diseases, insects and parasites of any kind. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 19 aprile 1934, anno 75°, n. 92, pp. 2017-2024).

*** By Ministerial Circular No. 457 of 16 April 1934 the Itinerant Schools of Agriculture are requested to carry out the widest possible verbal and written propaganda to encourage farmers to adopt all scientific and effective means of preventing and controlling crop diseases and pests. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 16 maggio 1934, anno VI, n. 10, pp. 2532-2533).

*** By Ministerial Decree of 25 April 1934 all land planted with vines in the communes of the province of Padua has been declared infected with grape phylloxera. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 4 maggio 1934, anno 75°, n. 106, p. 2255).

*** An Ordinance of the Prefect of the province of Catania, dated 25 April 1934, relates to the measures to be taken in view of locust control. (*Il Coltivatore Siciliano*, Catania, 1934, anno XIII, n. 4, pp. 95-96).

Switzerland. — By Circular of 1 March 1934 the Department of Agriculture, Industry and Commerce draws attention to the principal regulations in force relating to the destruction of the woolly aphis of the apple [*Eriosoma lanigerum*], the removal of mistletoe [*Viscum album*] and the collecting of cock chafer larvae [*Melolontha*]. (*La Terre Vaudoise*, Lausanne, 1934, XXVI[e] année, n° 10, p. 153-154).

Tunis. — By Decree of 29 January 1934 (13 chaoual 1352) the first paragraph of Article 1 of the Decree of 25 April 1925 is modified as follows:—

' Article 1. — Any owner of crops or plants of whatever nature is required to declare to the local administrative authorities any decay of plants which cannot be definitely ascribed to soil nature or weather influence and any insects, cryptogamic parasites or other injurious animal or plant causing serious damage to crops or the decay of cultivated plants '.

Articles 3, 4 and 6 of the Decree of 25 January 1922 are replaced by the following:—

' Article 3. — When the damage caused to crops by insects, cryptogamic parasites or any other injurious animal or plant is of a particularly serious nature such as to necessitate urgent measures of general application, the Director General of Agriculture shall cause their destruction in the district concerned by a special Syndicate to be formed under the Decree of 16 November 1932. The Syndicate undertakes to act under the technical control of the competent Service of the Direction General of Agriculture and to advance the funds required for the organisation of the campaign against the disease or pest in question '.

In the case where the application by private persons of the measures of destruction prescribed by the orders provided for by Article 1 of the Decree of 25 April 1925 has not given successful results or has not been carried out, the Director General of Agriculture shall take a compulsory order and authorise the Syndicate to proceed officially, after two clear days of notice, to the prescribed work of destruction in the district declared infested. (*Journal Officiel Tunisien*, Tunis, 20 février 1934, 52e année, nº 15, p. 440).

Yugoslavia. — The Regulation No. 190 of 28 March 1934 provides for the control of the quality of pyrethrum [*Chrysanthemum cinerariaefolium*]. (*Slouj-bene Novine Kralievine Yougoslaviie*, Beograd, 4 april 1934, god. XVI, br. 78-XX, str. 366-369).

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[*Dacus oleae*].

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[*Fusicoccum cedrelae* n. sp. on *Cedrela sinensis* and *Diaporthe oncostoma* on *Robinia pseud-acacia*. Description in French of the new species].

ATANASOFF, D. Virus diseases of plants: a bibliography. Sofia, Houdojnik Printing Company, 1934, [4] + 219 pp.
[The large numbers of workers studying the plant viruses and the rapid progress achieved in recent years have led to more than one recent attempt to collect and coordinate the scattered information on the subject contained in an ever increasing quantity of publications in all languages. But the learned Professor of Plant Pathology in the University of Sofia realised the lack of a specialised bibliography of the subject for the use of the research worker. He has therefore supplied the want in the bibliographical list just published and which he intends to keep up to date by means of an annual supplement.
The two first sections of the bibliography cover the books and papers of a more or less general nature, those of fundamental importance and those which deal with a number of virus diseases of different plants. The following sections, which form the main bulk of the present list, include the publications referring to the diseases of a single plant species or of several species of the same family; this allows of rapidly obtaining references to the works on a given plant.
It was to be expected that the most extensive sections are those dealing with the diseases of sugar cane and of the Solanaceae (potato, tomato and tobacco), which occupy about 24 and 75 pages respectively.
Indexes of authors and of host plants complete the work].

AUBERT, C.-G. Une invasion de la tordeuse du sapin en Normandie. *Bulletin du Comité des Forêts*, Paris, 1933, tome VIII, 21e année, nº 57, p. 598-601.
[*Tortrix rufimitrana*].

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[*Puccinia graminis*, *Tilletia tritici*, *Bacterium undulosum*].

BALDACCI, Elio, e CIFERRI, Raffaele. Il « marciume apicale » dei frutti di pomodoro. *L'Italia Agricola*, Roma, 1934, anno 71, n. 4, pp. 277-282, figg. 1-5.
[According to the writers this disease, which was attributed to bacteria or *Fusarium*, is really due to unfavourable environmental conditions and perhaps in the greater number of cases to deficiency or discontinuity in the moisture content of the soil].

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Leptomastix longipennis, *Hyperaspis usambarica*, *Exochomus flavipes* var. *sjöstedti*, *Sidis biguttatus*, *Cryptolaemus montrouzieri* appear among the natural enemies of *F. virgata*; as natural enemies of *D. cardinalis* and *O. hyalinipennis* respectively, *Phonoctonus principalis* (very rare) and *Triphleps* sp. have been observed.

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[*Inter alia* there is given the diagnosis of *H. sacchari* n. sp. injurious to the sugar cane in Italian Somaliland].

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[His Royal Highness the Duke of the Abruzzi, in his capacity as President of the 'Società Agraria Italo-Somala', decided in 1925 to organise a Mission with the object of carrying out investigations on the insects most harmful to crops in this Colony.

In the present volume, finally published on 28 February 1934, there are collected and discussed the results of the mission of enquiry which has been accomplished by Prof. G. Paoli, Director of the Royal Observatory for Plant Diseases at Genoa, and by Dr. A. Chiaromonte, Professor of Agricultural Entomology at the Italian Institute of Colonial Agriculture at Florence. This latter worker, as stated in the preface, remained in Italian Somaliland from 8 November 1925 till 11 November 1926, while Prof. Paoli was there from 31 January to 13 March and from 2 September to 11 November 1926.

Prof. Paoli, after having drawn up the programme of the investigations, made a special study of the question of leaf-roll in the cotton plant, of *Empoasca facialis* and *E. dolichi* and of their natural enemies, also of the biology of *Microbracon kirkpatricki*, parasite of *Platyedra gossypiella*; of some details of the biology of *Syagrus rugiceps*, the scale insects and their enemies, of the Lepidoptera attacking seeds in store and their parasites.

Prof. Chiaromonte caught and reared the insects injurious to crops, made a study of their life history and also collected a number of the parasites of many of these. The investigations made on the spot by the two members of the Mission and by Prof. Chiaromonte alone, during the absences of Prof. Paoli, were supplemented, on their return to Italy, by long and detailed laboratory researches at the Royal Observatory of Plant Diseases at Chiavari, where Prof. Chiaromonte for several months worked together with Prof. Paoli on the preparation of this volume and especially on the bibliographical work in connection.

This admirably arranged and illustrated account of what is at present known in regard to the agricultural entomology of Italian Somaliland, the life-history of the insects and the damage caused, is composed of the following principal parts:—

Capitolo I – Notizie sulla climatologia della Somalia italiana meridionale e sui suoi rapporti colla fauna entomologica.

Capitolo II. – Cenni sull'agricoltura in Somalia.

Capitolo III. – Revisione degli insetti di importanza agraria: *Orthoptera, Isoptera, Thysanoptera, Hemiptera, Neuroptera, Lepidoptera, Coleoptera, Hymenoptera, Diptera.*

Capitolo IV. – Acari di importanza agraria.

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[*Incarvillea delavayi, Heuchera sanguinea, Rudbeckia nitida, Anemone silvestris* and *Lamium album* for *Aph. ritzemabosi*; *Omphalodes verna, Anemone vitifolia, Doronicum plantagineum, Primula anisiaca, Rudbeckia neumanni and Paeonia sinensis* for *Aph. olesistus*].

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[See also this *Bulletin*, 1933, No. 12, p. 282.
Up to the present, *Sideridis* (*Leucania*) *zeae* Dup. has not been captured in Italy. *S. scirpi* Dup. and *S. sicula* Tr., considered as two different species, are in reality two primary forms of the same specific group. The popular name of 'nottua del granoturco' does not apply to *S. zeae* which at most should be regarded as present accidentally on maize, and which, in any case, is very rare in Europe. The real 'nottua del granoturco' is, in Italy, almost exclusively *Sesamia cretica* Led., of common occurrence and dangerous to Italian crops; on the other hand, *S. vuteria* Stoll, which destroys the maize crops in other European regions, is so far somewhat rarely found].

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NOTES

First International Congress of Electro-Radio-Biology. — This Congress will meet at Venice, Italy in September, 1934.

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